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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/398,307	09/20/1999	SHAWN W. HOGBERG	IRI03778	9914
23330	7590	04/10/2006	EXAMINER	
MOTOROLA, INC. LAW DEPARTMENT 1303 E. ALGONQUIN ROAD SCHAUMBURG, IL 60196			RAMOS FELICIANO, ELISEO	
			ART UNIT	PAPER NUMBER
			2617	

DATE MAILED: 04/10/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/398,307

Applicant(s)

HOGBERG ET AL.

Examiner

Eliseo Ramos-Feliciano

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 July 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10,12,14-17 and 19-25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10,12,14-17 and 19-25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. **Claims 1-2, 4-5, 7-8, 10, 12 14-17 and 21-22** are rejected under 35 U.S.C. 102(b) as being anticipated by Doner (US Patent Number 5,758,090).

Regarding **claims 1, 12 and 21**, Doner discloses a system and method for providing wireless communication and for managing channel assignment in a wireless communication system. Doner's system includes a plurality of subscribers (e.g. 20-₁) and a plurality of cells (12-₁, 12-₂, 12-₃, . . . 12-_n), each cell having a predetermined frequency band ($f_1, f_2, \dots f_m$) for use in establishing communication connections between a first location and a second location. See title, abstract and Figures 1-3.

"In particular, a first set of forward channels is reserved by the base station for transmitting to the mobile stations located within a first certain radius of the base station antenna at a predetermined power level. A second set of forward channels service the mobile stations located in a concentric annular ring centered around the base station antenna at a second power level. Third, fourth, and subsequent sets of forward radio channels may then be used to service mobile stations located at successively longer radii and successively different power levels." — column 3, lines 1-10.

"In other words, suppose that m available radio frequencies, f_1, f_2, \dots, f_m , are divided into n groups, c_1, c_2, \dots, c_n . The first group of frequencies, c_1 , are used by the base station controller 20 to establish forward links with mobile stations located within a first radius, R_1 , of the base station antenna 23. The second group of frequencies, c_2 , are assigned for use by mobile station 20 located within an annular ring between radii R_1 , and R_2 . Likewise, the n th frequency group, c_n , is assigned for use by mobile stations located between radii R_{n-1} and R_n ." — column 4, lines 48-57.

From above citations, a predetermined frequency band (see top of Figure 3; e.g. f_1, f_2, \dots, f_m) is divided (segmented) into a plurality of frequency sub-bands (group of frequencies or channel groups: e.g. c_1, c_2, \dots, c_n); which in turn comprise a plurality of radio channel frequencies. A multiple access scheme is implemented within each sub-band. A power range (level) is specified for each one of the frequency sub-bands or group of frequencies (c_1, c_2, \dots, c_n); wherein at least two of the different group of frequencies (sub-bands) are assigned power ranges (power levels) that are different from one another. The power level required for a first mobile station subscriber (first communication connection) is determined or ascertained; then, the corresponding sub-band that has such power level (having power ranges that encompass the power level of the signal) is identified and a radio frequency channel within such sub-band is assigned for the communication connection. See also columns 1, 4-6.

Doner further discloses "determining a signal strength received by the mobile station 20, such as by detecting a receive signal strength indication (RSSI) level during the control signal exchange with the control signaling receiver 28. Alternatively, this may be done by measuring

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the receive signal level at a transceiver 24 which is initially allocated to serving the mobile station 20." — column 4, lines 61-67.

From above citation, it is clear that upon receipt of a first communication connection (either during the control signal exchange, or when initially allocated as taught by Doner) in the wireless communication system, ascertaining (determining) a power level (RSSI) associated with the first communication.

Regarding **claim 7**, Doner discloses a system and method for providing wireless communication and for managing channel assignment in a wireless communication system. Doner's system includes a plurality of subscribers (e.g. 20-1) and a plurality of cells (12-1, 12-2, 12-3, . . . 12-n), each cell having a predetermined frequency band ($f_1, f_2, \dots f_m$) for use in establishing communication connections between a first location and a second location. See title, abstract and Figures 1-3.

"In particular, a first set of forward channels is reserved by the base station for transmitting to the mobile stations located within a first certain radius of the base station antenna at a predetermined power level. A second set of forward channels service the mobile stations located in a concentric annular ring centered around the base station antenna at a second power level. Third, fourth, and subsequent sets of forward radio channels may then be used to service mobile stations located at successively longer radii and successively different power levels." — column 3, lines 1-10.

"In other words, suppose that m available radio frequencies, $f_1, f_2, \dots f_m$, are divided into n groups, $c_1, c_2, \dots c_n$. The first group of frequencies, c_1 , are used by the base station controller 20 to establish forward links with mobile stations located within a first radius, R_1 , of the base

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station antenna 23. The second group of frequencies, c_2 , are assigned for use by mobile station 20 located within an annular ring between radii R_1 , and R_2 . Likewise, the n th frequency group, c_n , is assigned for use by mobile stations located between radii R_{n-1} and R_n ." — column 4, lines 48-57.

From above citations, a predetermined frequency band (see top of Figure 3; e.g. $f_1, f_2, \dots f_m$) is divided (segmented) into a plurality of frequency sub-bands (group of frequencies or channel groups: e.g. $c_1, c_2, \dots c_n$); which in turn comprise a plurality of radio channel frequencies. A multiple access scheme is implemented within each sub-band. A power range (level) is specified for each one of the frequency sub-bands or group of frequencies ($c_1, c_2, \dots c_n$); wherein at least two of the different group of frequencies (sub-bands) are assigned power ranges (power levels) that are different from one another. The power level required for a first mobile station subscriber (first communication connection) is determined or ascertained; then, the corresponding sub-band that has such power level is identified and a radio frequency channel within such sub-band is assigned for the communication connection. See also columns 1, 4-6.

Regarding **claims 2, 4-5, 8, 14-17 and 22**, Doner discloses everything claimed as applied above (see *claims 1, 7, 12, and 21*). In addition, the frequency sub-bands (group of frequencies or channel groups) include a plurality of CDMA channels; see abstract and column 4, lines 8-11, *inter alia*. The ascertained power level includes RSSI level measurement or transmit power level requirements for a given zone or radii of the cell; see citations above and column 4, lines 37 to column 5, line 37, and column 6, lines 55-62. The group of frequencies (sub-bands) include both transmit and receive radio frequency channels. Figure 3 depicts frequency multiplexing (e.g. FDMA).

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Regarding **claim 10**, Doner discloses everything claimed as applied above (see *claim 7*).

In addition, "In step 108, the base station controller 26 determines if the distance d , for a previously active mobile station has changed. If that distance has changed sufficiently, such that the mobile station has entered a different one of the n rings, then control passes to a step 109 where a new frequency is assigned. The frequency assignment scheme in step 109 is the same as that in step 106. In other words, the frequency for the forward link is selected from one of the sets c_1, c_2, \dots, c_n based upon the distance d as explained above." — column 5, line 66 to column 6, line 7. As a mobile station moves from one zone (e.g. radii R_1) to another (e.g. radii R_2) a new radio frequency channel having a new power level requirement is assigned for the communication connection. Controller 26 reads as the claimed means for monitoring and means for assigning.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. **Claims 3, 6, 9, 19-20, and 22-25** are rejected under 35 U.S.C. 103(a) as being unpatentable over Doner (US Patent Number 5,758,090) in view of Natarajan et al. (US Patent Number 5,749,044).

Regarding **claims 6, and 19-20**, Doner discloses everything claimed as applied above (see *claims 1 and 12*). However, Doner fails to specifically disclose satellite communication system as defined by applicant. But a wireless/cellular communication system is to a satellite

communication system as a county is to a state; the second extends over a larger geographic region. Therefore, Doner's invention can be extrapolated to satellite communications for the conventional advantage of extended geographic coverage, for example, more users can be serviced.

Natarajan et al. discloses a system and method for providing wireless communication and for managing channel assignment in a satellite communication system. "A central controller (40) executes a method (100) that selects and assigns channels to serve mobile subscriber units (30) in a space-based mobile telecommunication system (10)." — abstract. A space-based (satellite) mobile telecommunication system requires footprint regions, as depicted in Figures 1-2.

Therefore, it would have been obvious at the time the invention was made to extend Doner's teachings to a larger scale, such as to satellite communication system, for the advantage of an extended geographic area coverage, which in turn results into a greater number of users that can be serviced.

Regarding **claims 3, 9, and 22-25**, Doner discloses everything claimed as applied above (see *claims 1, 7 and 21*). However, Doner fails to specifically disclose TDMA as defined by applicant. But TDMA is just another technique of multiple access that can be used either singularly or in combination with Doner teachings as exemplified by Natarajan et al.

Natarajan et al. discloses a system and method for providing wireless communication and for managing channel assignment in a satellite communication system. "The channels are preferably combinations of L-Band and/or K-Band frequency channels but may encompass Frequency Division Multiple Access (FDMA) and/or Time Division Multiple Access (TDMA) and/or Code Division Multiple Access (CDMA) communication or any combination thereof.

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Other methods may be used as known to those of ordinary skill in the art." — column 3, lines 10-

16. The advantage of such system is that a larger number of users with a larger variety of capabilities can be serviced.

Therefore, it would have been obvious at the time the invention was made to implement Doner's teachings using various multiple access techniques, such as CDMA, TDMA, or FDMA, either singularly or in combination, for the advantage of providing service to a larger number of users with a larger variety of capabilities.

Response to Arguments

5. Applicant's amendment of the claims enlightened Examiner's new interpretation of the claims and made the claims clearly open to rejection based on new interpretation of the amended claims. Therefore, Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action.

Applicant's arguments with respect to claims 1-6, 12, 14-17, 19-25 have been considered but are moot in view of the new ground(s) of rejection.

Applicant's arguments with respect to claims 7-10 filed July 21, 2004 have been fully considered but they are not persuasive.

Applicant's arguments are directed to newly added limitations. These have now been treated on the merits. See rejection above for a detailed explanation.

Conclusion

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

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A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

7. Any inquiry concerning this communication from the examiner should be directed to Eliseo Ramos-Feliciano whose telephone number is 571-272-7925. The examiner can normally be reached from 8:00 a.m. to 5:30 p.m. on 5-4/9 1st Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marsha Banks-Harold, can be reached on (571) 272-7905. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


ELISEO RAMOS-FELICIANO
PRIMARY EXAMINER

ERF/erf

March 17, 2006